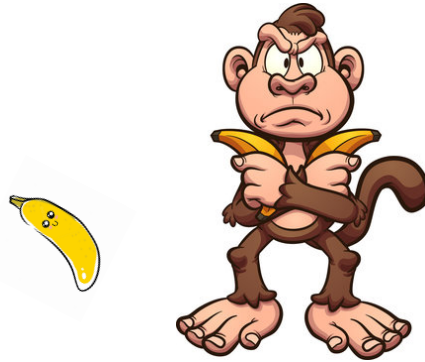


Mika the Monkey

Today, we are going to follow the life of the evil Monkey King, Mika.



An unsuspecting Mitra



The evil monkey King

Mika throws the first banana at Mitra with a speed of 2 meters per second, but misses!!! Mitra is now alerted. Even though the second banana is coming faster, at 3 meters per second, Mitra sees it one second before Mika throws it. If Mitra is 12 meters away from Mika, how long does Mitra have to dodge the banana?

$$3(t+1)=12$$

$$t=3$$

Mitra has fast reflexes and dodges the second banana. Mika throws a *third* banana at $7 + 2 * 3^2$ Meters per second. How much time does Mitra have now assuming she is standing 10 meters away from Mika?

$$25$$

$$25t=10$$

$$t=.4$$

Because of the last banana's speed, Mitra gets hit!



Now that she is injured, Mika leaves her alone. Mitra, who is in extreme pain, is walking with a speed of $\frac{1}{1+2t}$. What is her speed four seconds after she gets hit?

$$1(1+2*4)=$$
$$1/9$$

What is her speed twelve seconds after she gets hit?

$$1(1+2*12)=$$
$$1/25$$

If Mika keeps walking like this forever, what will be her speed?

$$0$$

Overconfident Mika



Arch-enemy Mussa



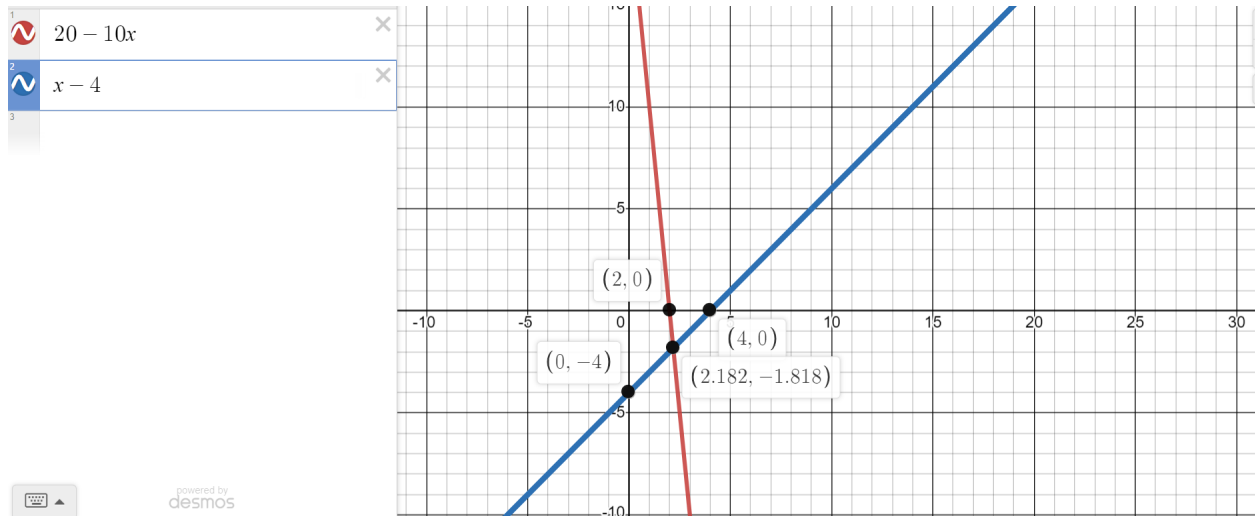
As Mika is walking in the forest, he sees a bunch of tasty bananas. But, he sees them at the exact same time as Mussa, his arch enemy. Mussa is 20 meters away from the bananas, so he starts sprinting. In $\frac{1}{2}$ second, he is 15 meters away from the bananas and in 1 second is 10 meters away from the bananas. What is Mussa's speed?

$$(15-10) / (1 - .5)$$
$$=10 \text{ m/s}$$

Since Mika is only four meters away from the bananas, Mika is confident he will win. In 1 second, Mika is 3 meters away from the bananas and in 2 seconds he is 2 meters away from the banana. What is Mika's speed?

$$(3-2) / (2-1)$$
$$=1 \text{ m/s}$$

Graph a line that reflects Mika's and Mussa's distance vs time path.



Who gets there first?

Mussa

How far is the other monkey from the banana at that time?

2 meters left

Mika is ENRAGED.

Now, Mika must take revenge. Mussa is running away from Mika with a speed of four meters per seconds and already has a head start of 18 meters. If Mika throws his banana at a speed of 6 meters per second, how long does it take to reach Mussa?

$$4x + 18 = 6x$$

$$x = 9 \text{ sec}$$



Mitra, oblivious, thinks that Mitra is terrorizing another monkey, so she tries to save Mussa from Mika's attack. Will Mitra, who is five meters from Mussa, be able to push Mussa out of the ball's path if she runs at the speed she had two seconds after her own attack?

$$1(1+2*2)*t=5$$

$$t=25$$

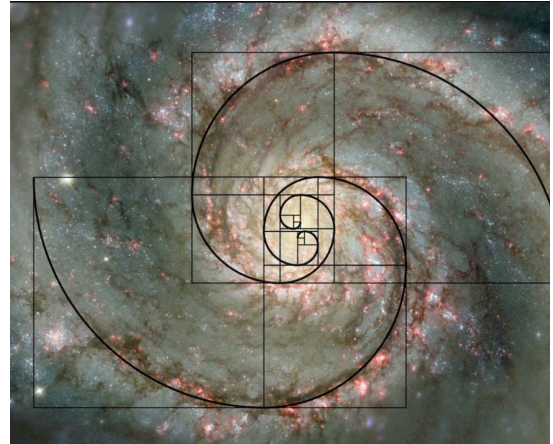
As Mika struts along, happy after pegging Mussa, Mike looks up at the night sky and encounters something that confuses him:

Explain what mathematical shape this galaxy is.

spiral

When graphed, what makes this shape?

Fibonacci sequence!!!

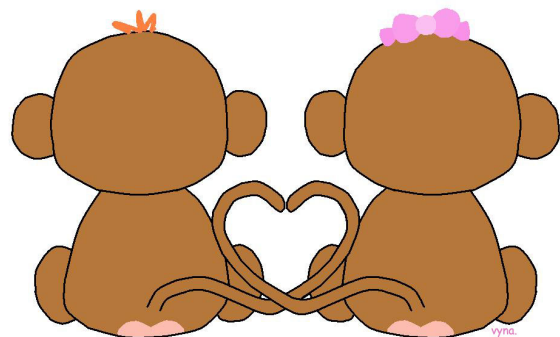


At the end of a long day, Mika sits with his best friend Myra. Secretly, Mika likes Myra and wants to impress her, so he wants to share bananas he found during his trip today.

How many ways can Mika give Myra 4 bananas?

Bruh idk wasn't paying attention in the

combinatorics lesson :). Ask Andy.



How many ways can Mika give Myra 6 bananas if he wants to keep 3 bananas or less to himself

Look at answer above.

